



PROCEDURE FOR: INSTALLATION OF INSULCO HEMYC PROTECTIVE WRAP SYSTEM ONTO SINGLE OR MULTIPLE CONDUITS	PROCEDURE NUMBER: <u>8400.103</u>
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PROCEDURE ISSUE SUMMARY

ISSUE/DATE	PREPARER	APPROVED	COMMENTS
A DRAFT 11/21/82	<i>R.L. Meadows</i> R.L. Meadows	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Issued for Review and Comment
B ISSUE 11/29/82	<i>R.L. Meadows</i> R.L. Meadows	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Add Insulco Foreword; Revise 1.0 to define testing; Revise 2.0; Add ANI reference to 3.2, Revise 4.0, 5.1, 5.2, 5.3, 6.7 and 6.8
C ISSUE 03/01/83	<i>K.W. Spriggs</i> K.W. Spriggs	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Revise title and foreword; Revise 1.0; 2.0; 3.3; 3.4; 4.0; 6.3; 6.4; 6.5; Add 6.7; Add Figure 5.
D ISSUE 03/30/83	<i>R.L. Meadows</i> R.L. Meadows <i>per Caraker</i>	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Add 3.5, 3.6, 3.7 and 3.8; Revise Clamp/Banding in 4.0; Add new 6.7 and move numbers down accordingly; Revise 6.8; Add Figure 4B; Revise 6.9.
E ISSUE 05/01/84	<i>D.L. Faylor</i> D.L. Faylor	<i>K.W. Spriggs</i> K.W. Spriggs <i>L.C. Spriggs</i> L.C. Spriggs	Add 6.11, 6.12, 6.13, 6.14, 6.15, 6.16; Add Figures 7 and 8; Add 4.0 Definitions; Add 3.9

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E Issue
05 01 84



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INSTALLATION PROCEDURE FOR INSULCO/HEMYC
PROTECTIVE WRAP SYSTEM
ONTO SINGLE OR MULTIPLE CONDUITS

C 1.0 PURPOSE

The purpose of the Procedure is to assure that the installation of the INSULCO/HEMYC Protective Wrap System is consistent with system as tested on the various qualification tests. The Fire Qualification Test, referenced as B&B CIP-1026, consisted of a One (1) Hour Fire Exposure, per ASTM E-119 criteria, including hose stream test in accordance with the AMERICAN NUCLEAR INSURERS Information Bulletin No. 5(79) entitled, "ANI/MAERP STANDARD FIRE ENDURANCE TEST METHOD TO QUALIFY A PROTECTIVE ENVELOPE FOR CLASS 1E ELECTRICAL CIRCUITS".

C 2.0 SCOPE

This Procedure provides the methods and guidelines to be utilized for the installation of INSULCO/HEMYC Protection Wrap Systems for conduits.

D 3.0 REFERENCES

3.1 10CFR50, Appendix R

3.2 ANI Bulletin 5-79

C 3.3 B&B Installation Procedure No. 8400.101
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM -
STRAIGHT SECTIONS OF CABLE TRAY

C 3.4 B&B Installation Procedure No. 8400.102
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM -
CURVED SECTIONS OF CABLE TRAY

D 3.5 QCP-10001, PACKAGING, SHIPPING, RECEIVING, HANDLING AND STORAGE FOR
INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS

D 3.6 QCP-10002, FABRICATION INSPECTION FOR INSULCO/HEMYC PROTECTIVE WRAP
COMPONENTS

D 3.7 QCP-10003, INSTALLATION INSPECTION CRITERIA FOR INSULCO/HEMYC
PROTECTIVE WRAP COMPONENTS

D 3.8 INSULCO/HEMYC PROTECTIVE CABLE WRAP SYSTEM TYPICALS
B&B Drgs B-310, B-311, B-312, and B-313

E 3.9 B&B Installation Procedure No. 8400.106
INSTALLATION OF FIRE STOPS AND TERMINATIONS WITHIN THE INSULCO/HEMYC
PROTECTIVE WRAP SYSTEM FOR CABLE TRAY(S) AND CONDUIT

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

C 4.0 DEFINITIONS

CLIP - sheet metal clip used to hold wrap system onto finger strap.

COLLAR - a blanket used at wrap joints on conduit in place of wrap overlay.

E CONDUIT STANDOFF - bracket used to allow 2" airspace between conduit and blanket.

FINGER STRAP - thin, sheet metal strapping with pre-punched sections that may be bent out to provide anchoring for wrap system.

D CLAMP BANDING - stainless steel or galvanized hose type clamp or banding.

5.0 RESPONSIBILITY

5.1 The authorized installer's ENGINEERING DEPARTMENT shall be responsible to define the scope of work as prescribed on the applicable contract documents and provide the appropriate drawings, specifications, requirements, instructions, etc. to the department responsible for installation.

This department shall also be responsible to provide liason with applicable client personnel and other internal departments to assure smooth flow of communication.

5.2 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the identification and scheduling of work to be performed as defined on the documents furnished by ENGINEERING.

5.3 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the performance of installation activities herein prescribed.

5.4 INSULCO, INC. QUALITY ASSURANCE DEPARTMENT shall be responsible that appropriate inspection, documentation and monitoring is provided as established in the applicable INSULCO and/or B&B Insulation Quality Control Procedures.

The quality activities may be performed by the Quality Control Department of any affiliate company of INSULCO, INC. or by any organization granted written authorization by the INSULCO QUALITY ASSURANCE DEPARTMENT utilizing the established INSULCO QC Procedures. If this is the case, INSULCO QA maintains the responsibility for the QA QC of the system installation and shall certify that the installed system is consistent with the qualification tested system design.

6.0 PROCEDURE

6.1 Stretch finger strapping along conduit to be protected and bend fingers out away from conduit.

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

- 6.2 Holding finger strapping against conduit, attach clamps on approximate 18" centers around conduit and tighten clamps. See Figure 1.
- 6.3 Impale wrap onto finger strap. Allow 2" minimum between edge of wrap and fingers.
- 6.4 Bring rest of wrap around conduit and impale edge of wrap onto fingers over the other edge. (See Figure 2).

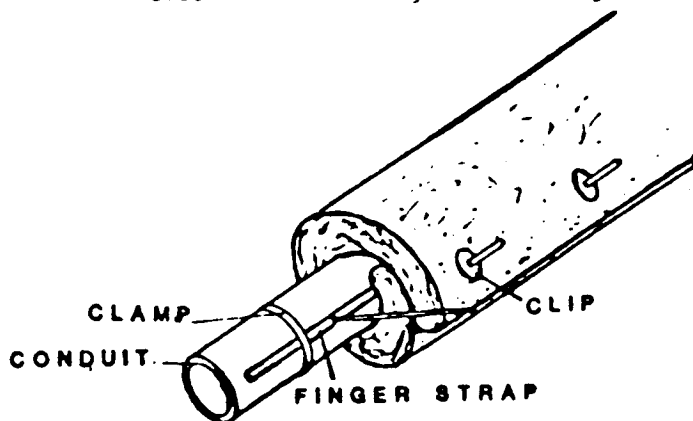


FIGURE 1

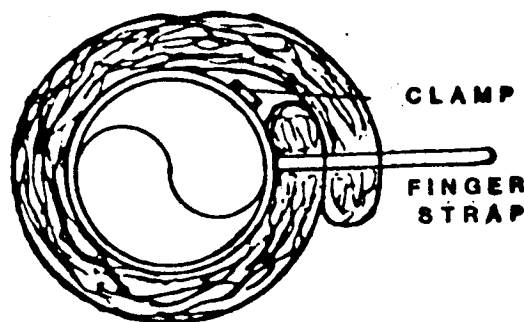


FIGURE 2

- 6.5 Attach clips onto fingers, compressing wrap approximately 1/4" - 1/2" and bend finger over to secure blanket.
- 6.6 Multiple conduits are similar but only one conduit needs finger strapping. (Reference Figure 3).
- 6.7 The number of conduits that may be wrapped is limited by wrap size. Large, bulky wrap sizes should be avoided due to difficulty in handling and possible damage.

If wrap sags excessively below conduit additional finger straps may be attached to centrally located conduits and used for additional wrap support.

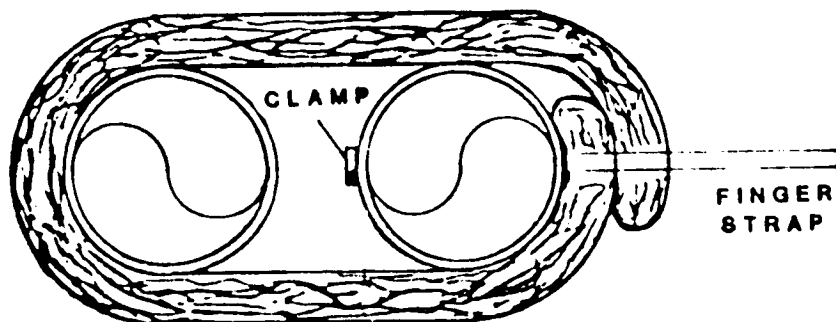


FIGURE 3

- 6.8 An alternate method of wrap attachment is to place the wrap around the conduit ensuring that the proper overlap is achieved. Attach clamps around the wrap to secure wrap to conduit. Clamp spacing if 9" maximum. (See Figure 4A and Figure 4B)

Tighten clamps until wrap is compressed 1/4" to 1/2". DO NOT OVERTIGHTEN as distortion of the blanket will result.

If gaps occur at wrap overlap, loosen clamps, shift blanket as necessary and re-tighten clamps.

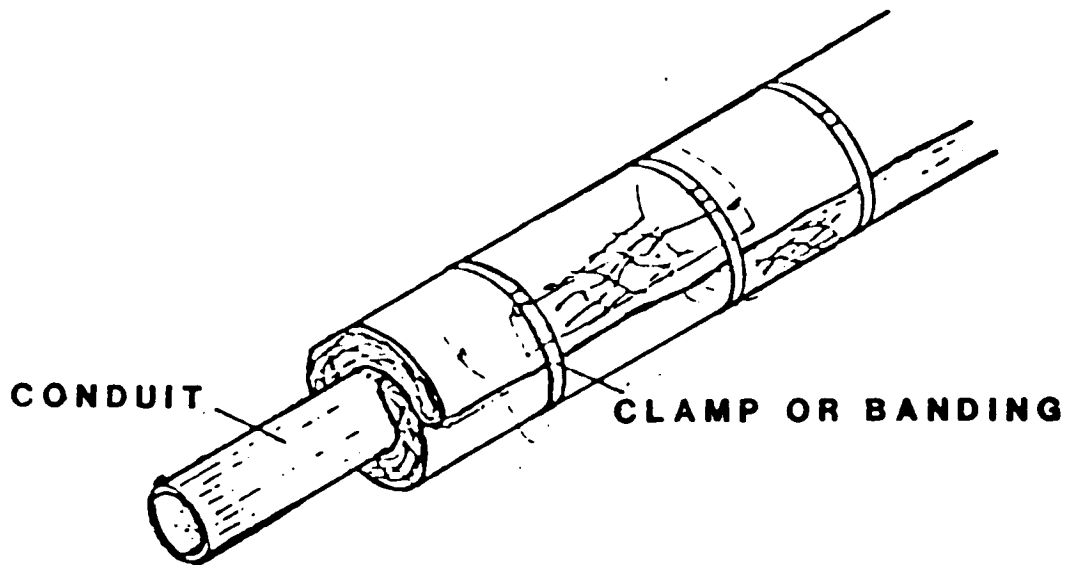


FIGURE 4A

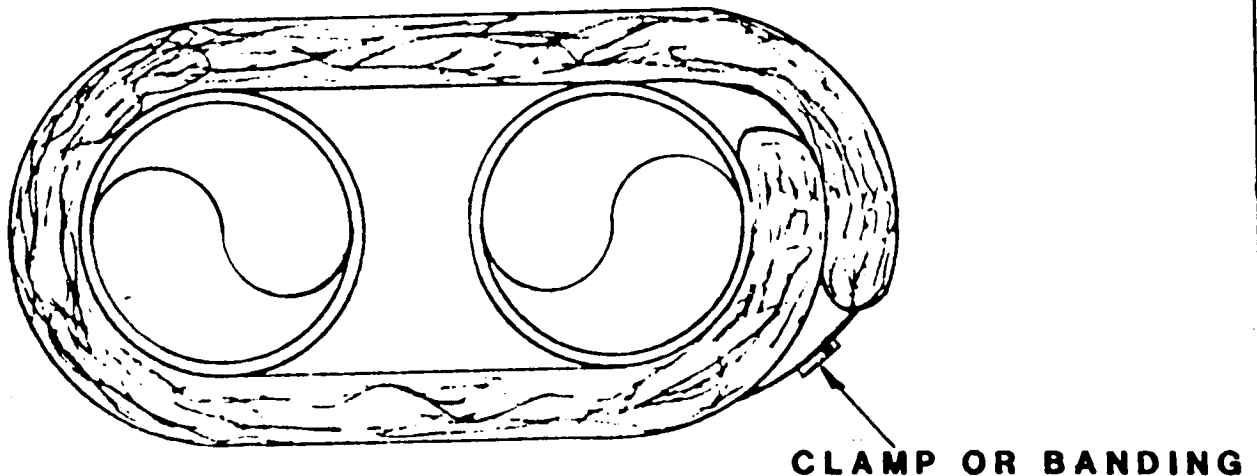


FIGURE 4B

6.9 In areas where ceiling, wall or floor clearances do not allow for wrap thickness, the wrap may be attached using methods and materials outlined in Procedure No. 8400.104, Section 6.5.

6.10 One of the two methods as shown in Figures 5 and 6 shall be outlined at wrap joints. Clamps or banding to secure should be installed as shown.

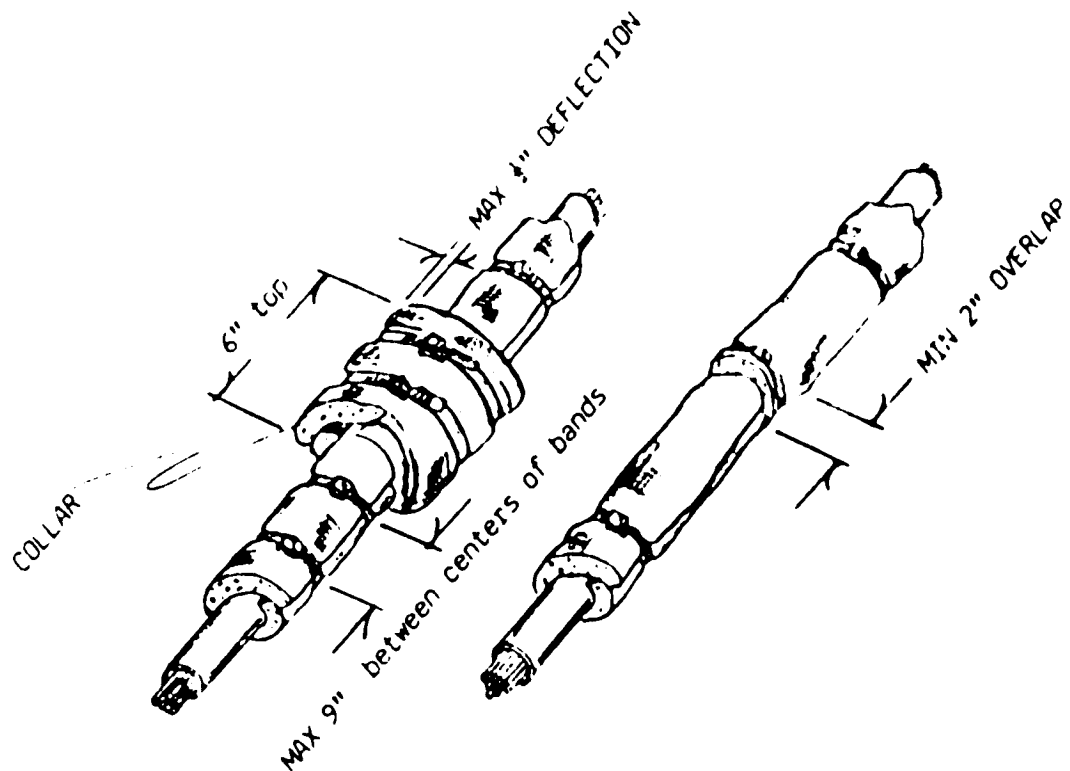


FIGURE 5

Typical Conduit Wrap
(Separate Wrap Type)

FIGURE 6

Typical Conduit Wrap
Joint Detail
(Overlap Type)

6.11 The following method to be used where 2" standoff bracket is required. Attach conduit standoff to conduit using all thread rod. (See figure 7). Use lockwasher and bolt to secure to conduit.

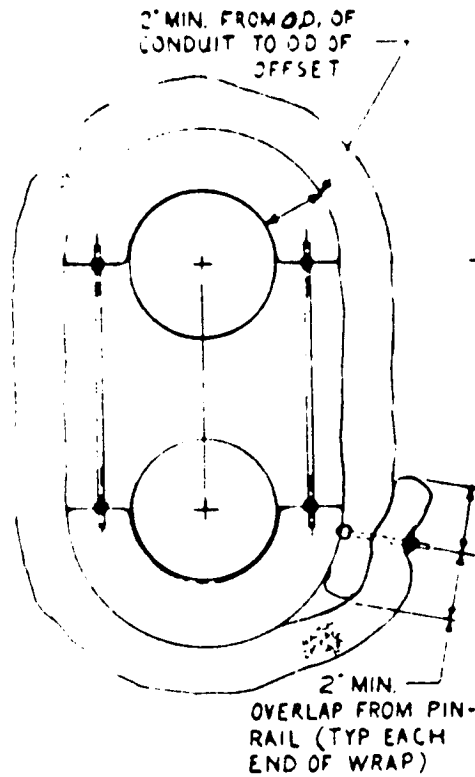


FIGURE 7

- 6.12 Conduit standoff are to be placed on maximum 18" centers. Attach rail and/or strut using bolts and lockwashers. Stud spacing is on 9" maximum centers. (See Figure 8) Additional pin rail and/or strut may be used as determined by installers site engineer.

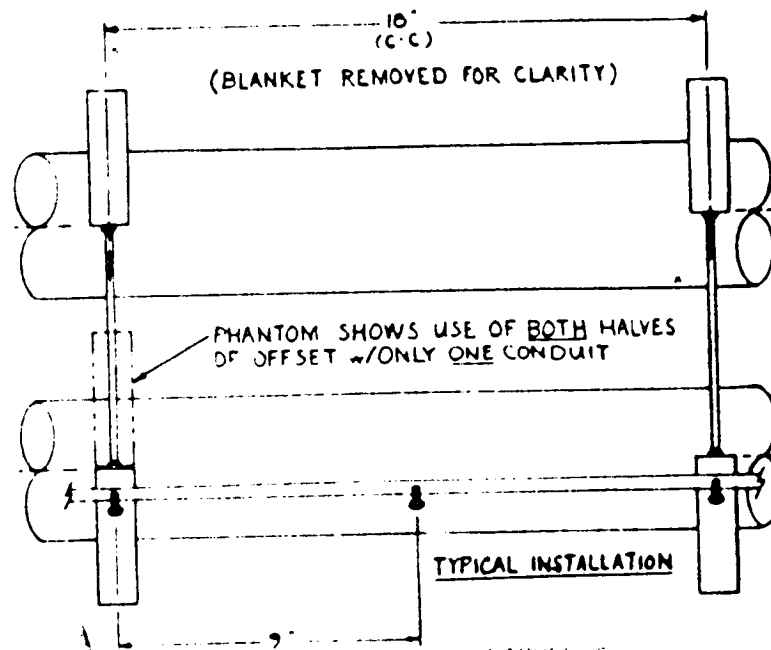


FIGURE 8

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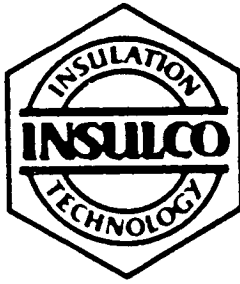
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- 6.13 After framework is complete be sure to tighten all bolts.
- 6.14 Place blanket over studs allow minimum 2" overlap from stud to edge of wrap. Bring wrap around standoff and impale edge of wrap onto studs. Allow minimum 2" overlap from stud to edge of wrap. (See Figure 7)
- 6.15 Use fender washer locknut to secure wrap to pin rail. Tighten locknut until wrap is compressed 1/4" to 1/2".
- 6.16 Use termination of system similar to procedure 8400.106, 6.3 termination - conduit (floor, ceiling or wall).

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE



INSULCO INCORPORATED

November 1, 1982

FOREWORD

This Procedure has been developed by B&B Insulation, Inc., an affiliate company of INSULCO, INC. and is intended for use in the installation of the HEMYC PROTECTIVE WRAP SYSTEM into nuclear facilities.

This Procedure may be utilized by an affiliate company of INSULCO, INC. or by any organization granted written authorization by INSULCO, INC. Refer to Section 5.4 within this Procedure for certification of the installed system requirements.

INSULCO, INCORPORATED

L. Charles Spriggs
Quality Assurance Manager



PROCEDURE FOR: REPAIR AND INSTALLATION OF THE INSULCO/HEMYC PROTECTIVE WRAP SYSTEM AROUND INTERFERENCES AND OBSTRUCTIONS	PROCEDURE NUMBER: <u>8400.104</u>
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PROCEDURE ISSUE SUMMARY

ISSUE/DATE	PREPARER	APPROVED	COMMENTS
A DRAFT 11/21/82	<i>R.L. Meadows</i> R.L. Meadows	<i>K.R. Harris</i> K.R. Harris	Issued for Review and Comment
B ISSUE 11/29/82	<i>R.L. Meadows</i> R.L. Meadows	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Add Insulco Foreword; Revise 1.0 to define testing; Revise 2.0, 3.0, 5.0, 6.1.3, 6.1.6, 6.1.7, 6.2.1, 6.2.2, and 6.3.1,
C ISSUE 03/01/83	<i>K.W. Spriggs</i> K.W. Spriggs	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Revise title and foreword; Revise 1.0, 2.0, 3.4, 3.5, 3.6, 4.0 (thread), 6.1.1, 6.1.2, 6.1.4, 6.1.6, 6.3.1; 6.2.3 Added; Fig. 6 Added; Revise 6.3.3, 6.3.4, 6.4.1, 6.4.2, 6.4.4.4, 6.4.5.5.
D ISSUE 03/08/83	<i>K.W. Spriggs</i> K.W. Spriggs	<i>Gene Brault</i> Gene Brault <i>L.C. Spriggs</i> L.C. Spriggs	Revise 4.0 Concrete Anchors & add Retainer Strap; Revise 6.3.4, Add the note "retainer strap" to Fig. 6 and 7.
E ISSUE 03/30/83	<i>R.L. Meadows</i> <i>for Cable</i> R.L. Meadows	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Add additional references, revise Section 6.0, Para 6.2.2, added Figure 8.

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E ISSUE
03/30/83

B & B INSULATION, INC.

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PROCEDURE FOR THE REPAIR AND INSTALLATION OF THE INSULCO/HEMYC PROTECTIVE WRAP SYSTEM AROUND INTERFERENCES AND OBSTRUCTIONS

C 1.0 PURPOSE

The purpose of this Procedure is to assure that the installation of the INSULCO/HEMYC Protective Wrap System is consistent with system as tested on the various qualification tests. The Fire Qualification Test, referenced as B&B CTP-1026, consisted of a One (1) Hour Fire Exposure, per ASTM E-119 criteria, including hose stream test in accordance with the AMERICAN NUCLEAR INSURERS Information Bulletin No. 5(79), entitled "ANI/MAERP STANDARD FIRE ENDURANCE TEST METHOD TO QUALIFY A PROTECTIVE ENVELOPE FOR CLASS IE ELECTRICAL CIRCUITS".

C 2.0 SCOPE

This Procedure provides the methods and guidelines to be utilized for the repair and installation of the INSULCO/HEMYC Protective Wrap Systems around interferences and obstructions.

3.0 REFERENCES

3.1 10CFR50, Appendix R

3.2 ANI Bulletin No. 5(79)

3.3 HEMYC Test CTP-1026

E 3.4 QCP-10001, PACKAGING, SHIPPING, RECEIVING, HANDLING AND STORAGE FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS

E 3.5 QCP-10002, FABRICATION INSPECTION FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS

E 3.6 QCP-10003, INSTALLATION INSPECTION CRITERIA FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS

E 3.7 INSULCO/HEMYC PROTECTIVE CABLE WRAP SYSTEM TYPICALS
B&B Drgs B-310, B-311, B-312, and B-313.

4.0 DEFINITIONS

D CONCRETE ANCHORS - site approved anchors such as HILTI or Phillips Wedge Anchors used to hold blanket to walls, ceiling, or partitions.

NEEDLE - a needle, curved or straight, capable of handling the thread type noted in these definitions.

E PLUMBERS TAPE - flexible metal strip having pre-punched holes running the length of the attached wrap.

D RETAINER STRAP - rigid metal strip having pre-punched holes running the length of the attached blanket.

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

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ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

C THREAD - fire and heat resistant, quartz type thread such as Alpha Quartz Q-24.

B 5.0 RESPONSIBILITY

5.1 The authorized installer's ENGINEERING DEPARTMENT shall be responsible to define the scope of work as prescribed on the applicable contract documents and provide the appropriate drawings, specifications, requirements, instructions, etc. to the department responsible for installation.

This department shall also be responsible to provide liaison with applicable client personnel and other internal departments to assure smooth flow of communications.

5.2 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the identification and scheduling of work to be performed as defined on the documents furnished by ENGINEERING.

5.3 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the performance of installation activities herein prescribed.

5.4 INSULCO, INC. QUALITY ASSURANCE DEPARTMENT shall be responsible that appropriate inspection, documentation, and monitoring is provided as established in the applicable INSULCO and/or B&B Insulation Quality Control Procedures.

The quality activities may be performed by the Quality Control Department of any affiliate company of INSULCO, INC. or by any organization granted written authorization by the INSULCO QUALITY ASSURANCE DEPARTMENT utilizing the established INSULCO QC Procedures. If this is the case, INSULCO QA maintains the responsibility for the QA/QC of the system installation and shall certify that the installed system is consistent with the qualification tested system design.

6.0 PROCEDURE

6.1 Penetrating members

- C 6.1.1 Cut affected wrap to a depth sufficient to allow the wrap to be installed around the penetrating member (See Figure 1).
- C 6.1.2 Using quartz thread and proper needle (curved needle suggested) sew the inner portion of the wrap (Siltemp or fiberglass) together around the penetrating member.
- B 6.1.3 Fill any gaps in the ceramic fiber fill with additional fiber and sew the outer Siltemp material together. (See Figure 2) Stitches shall be no more than 1/2" apart.
- B 6.1.4 Fill any gaps around the penetrating member with ceramic fiber.

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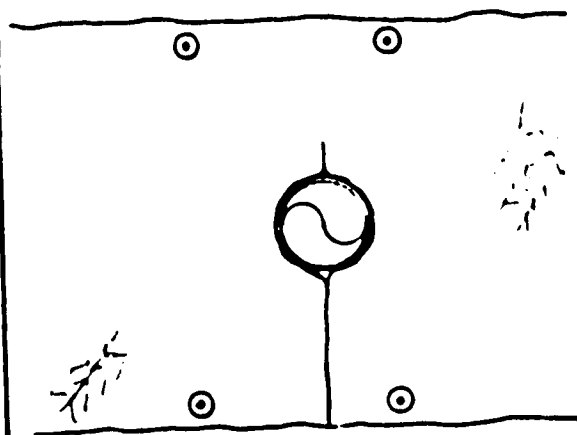


FIGURE 1

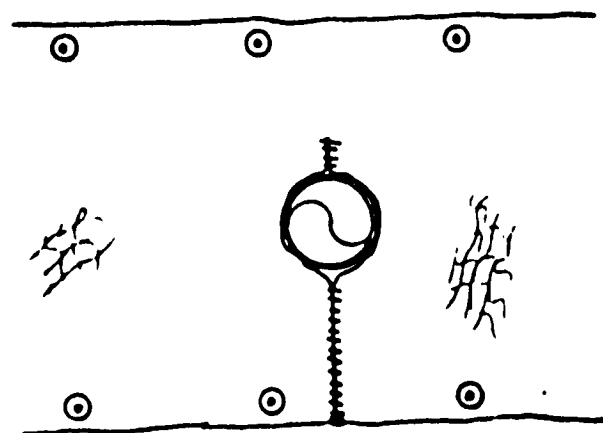


FIGURE 2

- 6.1.5 Cut a 3" - 4" wide piece of ceramic blanket and place around the penetrating member with 1" - 2" overlap at the ends. (See Figure 3).
- 6.1.6 A slightly larger section of Siltemp shall be placed over the ceramic blanket and sewn top, sides and bottom to tightly seal the wrap system. (See Figure 4). Stitches shall be no more than 1/2" apart.
- 6.1.7 It may not be possible in all cases to get the Siltemp cloth tight against the penetrating member. In these cases ensure that the ceramic blanket is forced tightly against the penetrating member by the Siltemp to prevent flame and/or heat passage into system. Clamps may be used to accomplish this, as necessary.

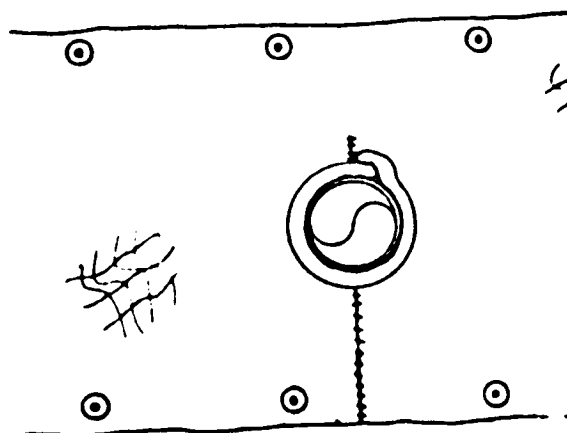


FIGURE 3

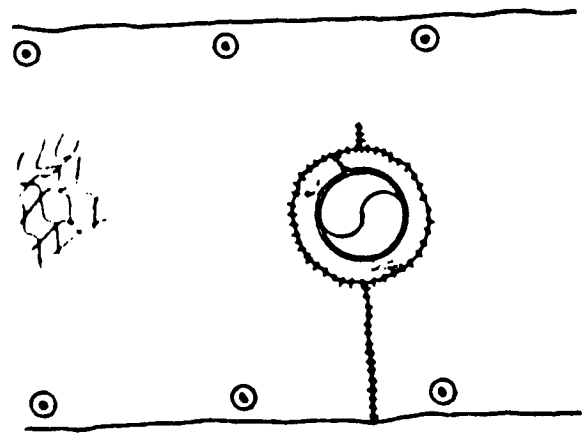


FIGURE 4

6.2 Adjoining or Supporting members

- 6.2.1 If possible, the adjoining or supporting member should be encapsulated within the system using the procedure outlined in Section 6.1 to seal any openings. (See Figure 5).

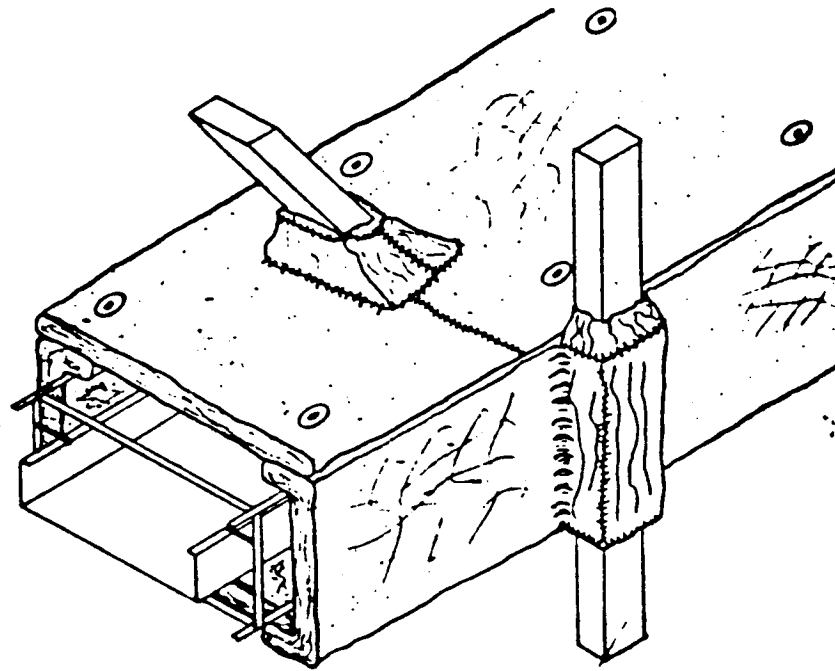


FIGURE 5

- 6.2.2 Where, due to size, shape or location, the adjoining or supporting member can not be encapsulated, the Installer's Site Engineer shall determine alternate methods on a case by case basis. Client's Engineer or authorized representative shall review alternate methods, as required. Such alternates shall be within the parameters established by the INSULCO/HEMYC fire testing.

6.3 Wall, Ceiling or Floor Interferences

- 6.3.1 Where walls, ceilings or floor prevent the installation of the full system (framework and weap) the wraps may be installed as shown in Figure 6. Extra wrap supports may be required as determined by the Installer's Site Engineer.
- 6.3.2 Framework shall be attached to the interfering surface using concrete anchors and L-Brackets #B-6102 as shown in Figure 6.

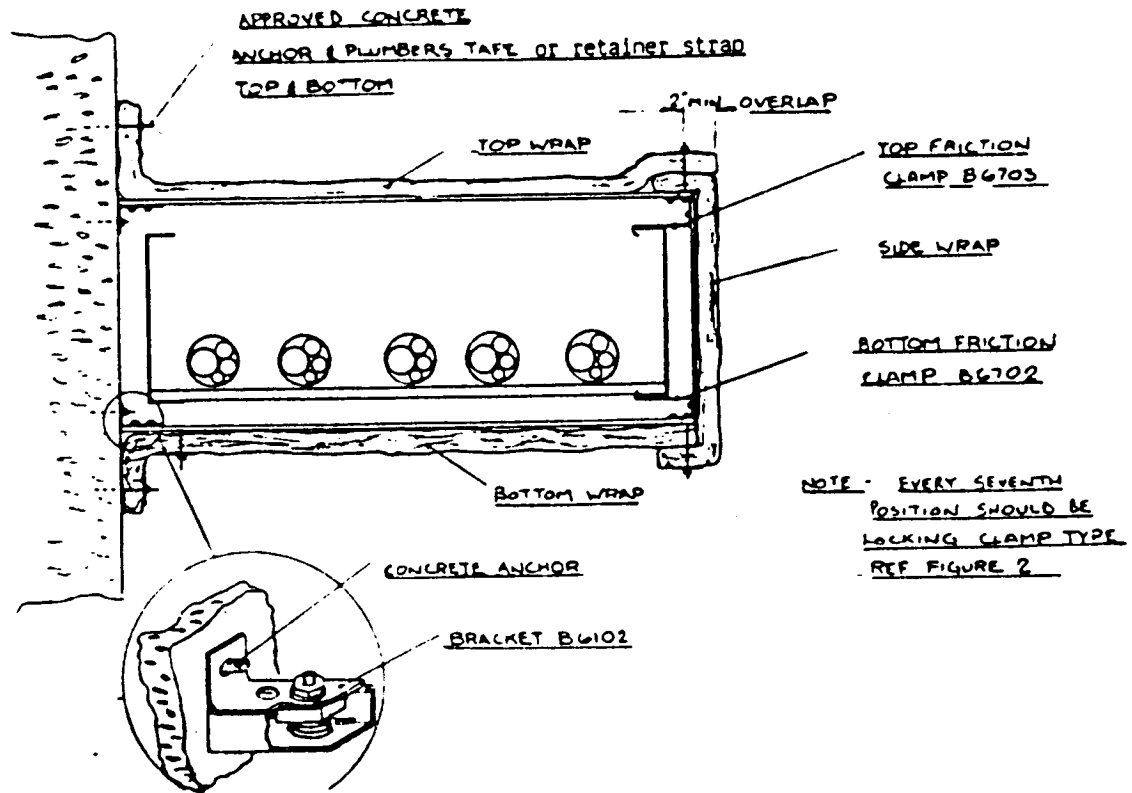


FIGURE 6

- 6.3.3 Concrete anchors for wrap shall be placed no more than 9" apart.
- 6.3.4 Plumbers tape or retainer strap must be installed in the areas where the wrap system is attached to a wall or ceiling. The plumbers tape or retainer strap is to be installed over the studs after the blanket is installed and prior to the fender washer and locknut. (See Figure 7). Tape should be kept as tight as possible to prevent the wrap from sagging away from the wall creating a passage for heat and/or flame. Additional holes in plumbers tape or retainer strap may be made as necessary to accommodate variations in stud placement.

PLUMBERS TAPE
or retainer
strap

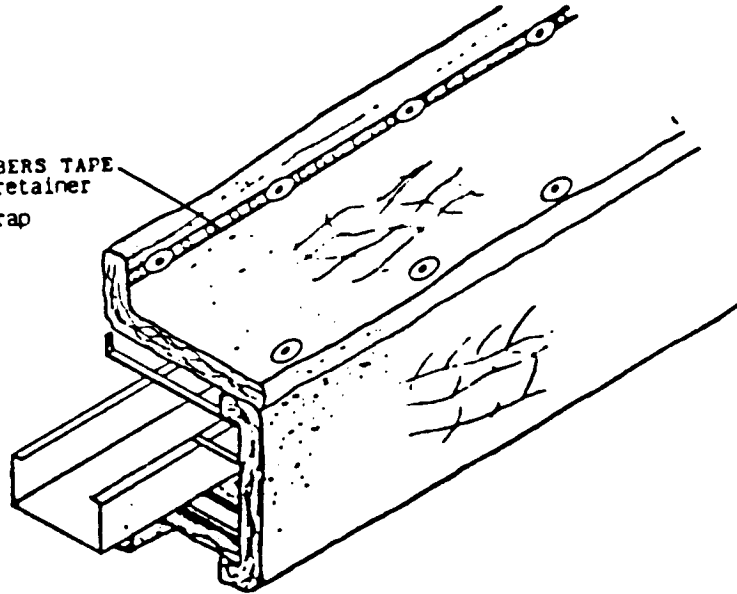


FIGURE 7

6.4 Repair Procedure

- 6.4.1 Responsible parties shall inspect damaged wrap to determine the extent of damage and if repair or replacement is required. Order replacement wrap if damage is extensive.
- 6.4.2 Remove damaged wrap to work area.
- 6.4.3 Replace any damaged or deformed framework/support materials utilizing methods outlined in B&B Insulation Procedures 8400.101, 8400.102 and/or 8400.103.
- 6.4.4 Rips
- 6.4.4.1 Sew the interior fabric, if necessary, the full length of the ripped fabric with stitches no more than 1/2" apart. Extra stitches will need to be added to each end of rip to ensure that the rip does not "creep".
- 6.4.4.2 Replace any ceramic fiber lost due to damage. Ensure that no gaps remain in fiber filler and that proper thickness is maintained.
- 6.4.4.3 Sew the exterior fabric together as outlined in Section 6.4.4.1. If any gaps are found in fabric it may be necessary to insert an appropriately sized piece of fabric inside the system prior to sewing fabric closed.
- 6.4.4.4 Reinstall wrap as outlined in B&B Procedure 8400.101.

6.4.5 Holes or large tears

- 6.4.5.1 Patches of the proper type fabric, Siltemp or fiberglass, should be cut to a size sufficient to cover the hole with an approximate 2" overlap onto undamaged fabric.
- 6.4.5.2 Repair the interior surface first, if necessary, by placing patch over hole and sewing around the perimeter of patch with stitches no more than 1/2" apart.
- 6.4.5.3 Replace any ceramic fiber as necessary. Ensure that no gaps remain and that proper thickness is maintained.
- 6.4.5.4 Place the exterior patch over the hole and sew as noted in Section 6.4.5.2. See Figure 8.
- 6.4.5.5 Reinstall wrap as outlined in B&B Procedure 8400.101 using new locknuts on studs.

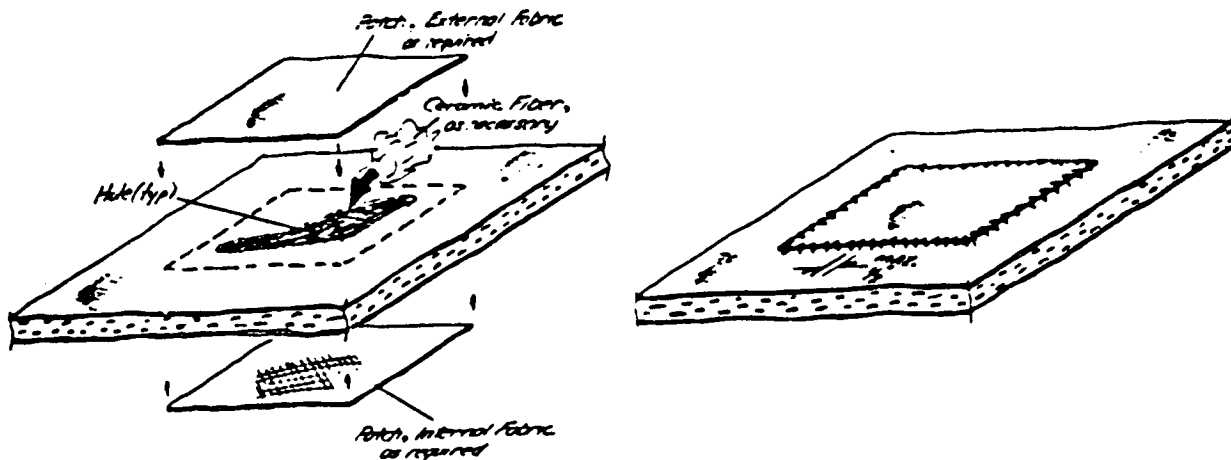


FIGURE 8

7.0 ATTACHMENTS

None



PROMATEC

PROGRESSIVE MATERIALS AND TECHNOLOGIES, INC.

PROCEDURE FOR:

FABRICATION OF INSULCO/HEMYC CABLE
PROTECTION SYSTEM COMPONENTS

PROCEDURE NUMBER:

IP-8400.105

PROCEDURE ISSUE SUMMARY

ISSUE/DATE	PREPARER	APPROVED	COMMENTS
A Issue 03/07/85	<i>Durrell L. Failor</i> D. L. Failor	<i>K.R. Harris</i> K. R. Harris <i>L.C. Smith</i> L.C. Smith 1995	This procedure supercedes 8&B IP-8400.105 C Issue in its entirety.

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FABRICATION OF INSULCO/HEMYC PROTECTIVE WRAP SYSTEM COMPONENTS

1.0 PURPOSE

The purpose of this Procedure is to assure that the fabrication of the INSULCO/HEMYC Cable Protection System Components is consistent with the system components as tested in the various qualification tests. The Fire Qualification Test, referenced as B&B CTP-1026, consisted of a One (1) hour Fire Exposure, per ASTM E-119 criteria, including hose stream in accordance with the American Nuclear Insurers Information Bulletin No. 5(79) entitled, "ANI/MAERP STANDARD FIRE ENDURANCE TEST METHOD TO QUALIFY A PROTECTIVE ENVELOPE FOR CLASS CIRCUITS".

2.0 SCOPE

This Procedure provides the methods and guidelines for the fabrication of both cable tray and conduit protection system components. The fabrication activities are to be performed by an outside source with Quality verification by (PROMATEC) Quality Personnel.

3.0 REFERENCES

- 3.1 10CFR50, Appendix R
- 3.2 ANI Bulletin No. 5(79)
- 3.3 INSULCO/HEMYC Fire Qualification Test - B&B CTP-1026
- 3.4 ANI Acceptance dated 08/02/82
- 3.5 QCP-10001, PACKAGING, SHIPPING, RECEIVING, HANDLING AND STORAGE FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS.
- 3.6 QCP-10002, FABRICATION INSPECTION FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS.
- 3.7 INSULCO/HEMYC PROTECTIVE CABLE WRAP SYSTEM TYPICALS
B&B DRGS. B-310, B-311, B-312 and B-313.

4.0 DEFINITIONS

NONE

5.0 RESPONSIBILITY

- 5.1 The authorized installer's ENGINEERING DEPARTMENT shall be responsible to define the scope of work as prescribed on the applicable contract documents and to provide the applicable drawings, specifications, requirements, instructions, etc., to the department responsible for fabrication and installation.



This department shall also be responsible to provide liason with applicable client personnel and other internal departments to assure a smooth flow of communication.

- 5.2 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the identification and scheduling of work to be performed as defined on the documents furnished by ENGINEERING.

This PRODUCTION DEPARTMENT shall also be responsible for the initiation of appropriate Fabrication Orders, verify their authenticity, initiate appropriate procurement documents and provide these documents to the fabrication facility.

- 5.3 The PROMATEC QUALITY ASSURANCE DEPARTMENT shall be responsible that appropriate inspection, documentation and monitoring is provided as established in the applicable PROMATEC Quality Control Procedures.

6.0 PROCEDURE

- 6.1 Only Approved materials as listed below shall be utilized in the fabrication of INSULCO/HEMYC Cable Protection System Components.

Acceptable Materials

6.1.1 External Fabric

- a. SILTEMP 84CH/SR Water Repellant, Thermal Barrier Cloth, 0.030 nom. thickness, 18oz/yd(2)
- b. Or Approved equal

6.1.2 Internal Fabric

- a. Klever 600/6 or J.P. Stevens #332 Fiberglass Cloth, 49" width, 13 oz/yd(2)
- b. Or Approved equal

(Internal Fabric may be used on the non-fire side of protection blanket as necessary. If used, External Fabric must overlap a minimum of 6" onto non-fire side.)

6.1.3 Internal Filler

- a. Johns-Manville Cerablanket
6 or 8 lb density
0.5, 1.5 and/or 2.0 inch thickness

OR

- b. Babcock & Wilcox KOAWOOL Ceramic Fiber Blanket
6 or 8 lb density



0.5, 1.5 and/or 2.0 inch thickness

OR

c. Approved equal

6.1.4 Thread

a. Astroquartz sewing thread Type Q-24 Teflon coated approximately .020" diameter
Breaking Strength -- 20 lbs

OR

b. Alphaquartz sewing thread Type Q-24 Teflon coated approximately .020 diameter
Breaking Strength -- 20 lbs

OR

c. Approved Equal

6.2 Fabrication Order (Form QC-59)

6.2.1 The completed Fabrication Order (B&B Form QC-59) shall be provided to the fabrication facility.

6.2.2 This form shall define information as listed below:

- a. Fabrication Order
- b. Blanket Number
- c. Project Number
- d. Project Name
- e. Location -- building, room, elevation
- f. Drawing Reference
- g. Blanket Length
- h. Width
- i. Thickness ____ 0.5", ____ 1.5", ____ 2"
- j. Tray Identification
- k. Conduit Identification
- l. Other -- General comments, description, etc.



- m. Sketch -- Brief sketch as required
- n. Client Acceptance
- o. Certification
- p. Ordered by and Date
- q. INSULCO QA/QC Acceptance and Date

If any information is not required, N/A shall be inserted in the applicable area.

6.3 Manufacture of Protective Wrap Components

6.3.1 Initial Envelope Assembly (Figure 1)

6.3.1.1 Cut external and internal (if required) fabrics to proper dimensions - as defined by fabricator to assure proper finished dimensions as specified on the applicable fabrication order. As applicable, fabricator shall measure from the "finished" edge of fabrics not the "factory" edge.

6.3.1.2 Double stitch external and internal fabrics together as shown in Figure 1. If only external fabric is used double stitch fabric together as shown in Figure 1A.

6.3.1.3 Double stitch one end of blanket as shown in Figure 2/2B, if applicable. Fabricator may elect to insert blanket prior to closure of either end. In this case, refer to Item 6.3.3.2 for instructions.

During fabrication of wraps it may be necessary to use staples, pins or clips to hold fabrics together while sewing. These may remain within the system but shall not damage or be detrimental to the wrap.

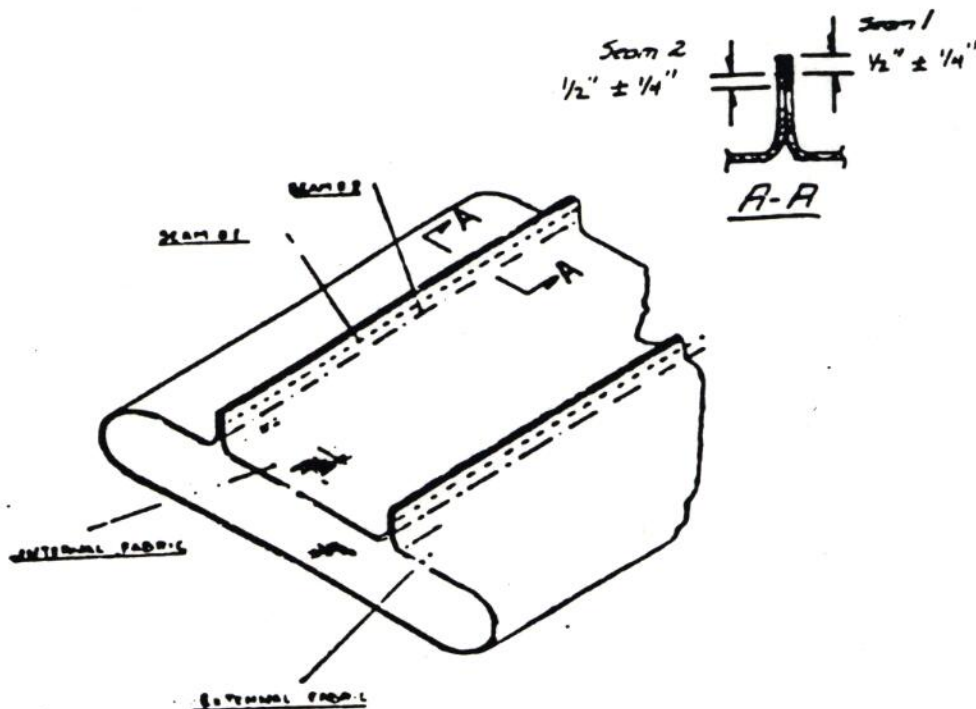


FIGURE 1

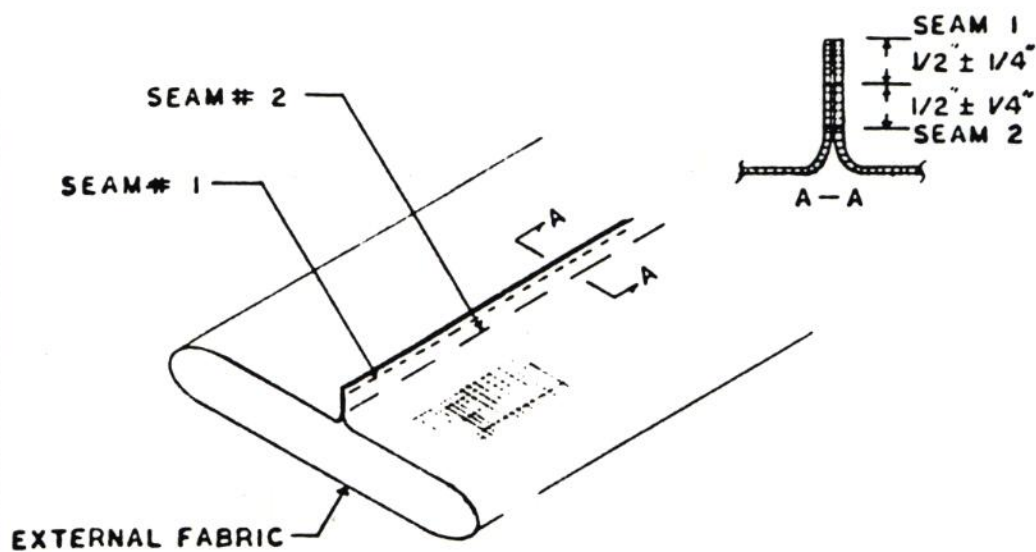


FIGURE 1A

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE



- 6.3.1.4 Turn envelope assembly inside out to hide exposed rough edges of fabric and provide a "finished" seam appearance.

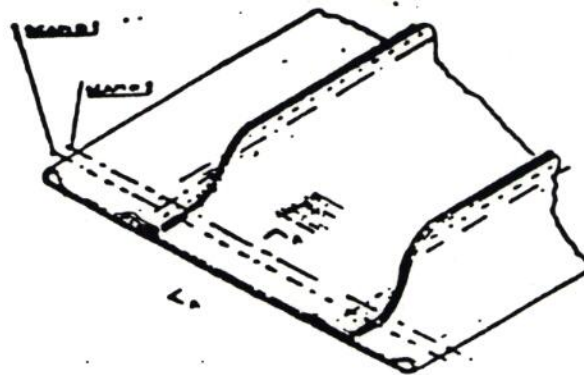


FIGURE 2

QT.

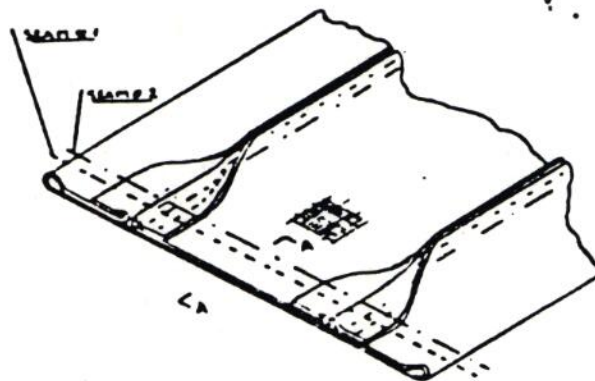


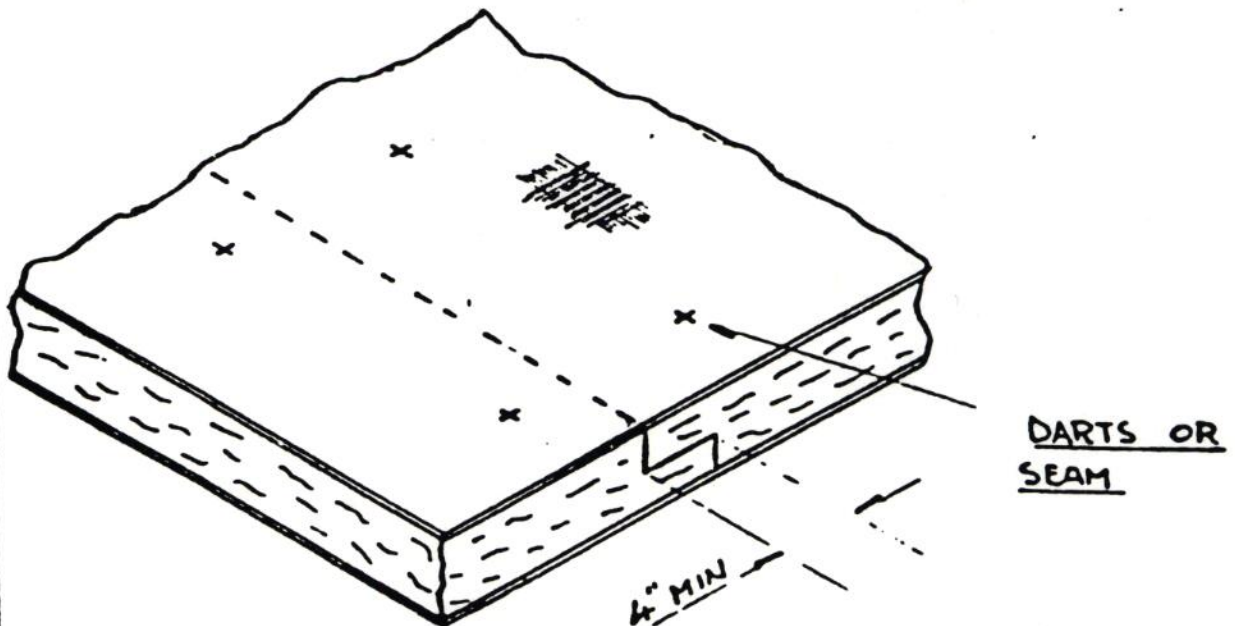
FIGURE 2B



6.3.2 Insertion of Filler Material

6.3.2.1 Cut filler material to proper size (as defined by fabricator to assure proper finished dimension) 0.5" thick - HEMYC Wrap; 1.5" thick - Cable Tray; 2" thick - Conduit.

6.3.2.2 Multiple pieces of filler material may be required to fabricate wraps. To prevent joint gaps in filler material, trim pieces as shown in Figure 3 and secure "darts" spaced on maximum 9" centers for 2" blankets or 4" hand sewn seam (See Figure 4) for 0.5" and 1.5" blankets. Darts or seam shall be placed parallel to overlap pieces and minimum six (6) inches = 1" from center line of overlap.



6.3.2.3 Insert filler material inside envelope assembly assuring that filler material is kept flat and occupies the entire interior of the envelope and is relatively tight.

6.3.2.4 If filler material has a tendency to "bunch up" during installation, the fabricator shall smooth by hand or other means to assure total fill. Method used shall not cause damage or be detrimental to the wrap system.

NOTE: If filler material appears to be too large



03/07/85

creating "punkers" at stitches, remove filler material and trim as necessary.

6.3.3 Completion of Envelope Assembly

6.3.3.1 Roll under fabric at open end and double stitch as shown in Figure 4A.

6.3.3.2 If both ends were left open until insertion of filler material, both ends shall now be closed as shown in Figure 4A.

6.3.4 Longitudinal Stitching

6.3.4.1 Longitudinal stitching shall be performed as shown in Figure 4. When multiple widths of filler material are required (Item 6.3.2.2) a minimum of two row of longitudinal stitches must be in each multiple width.

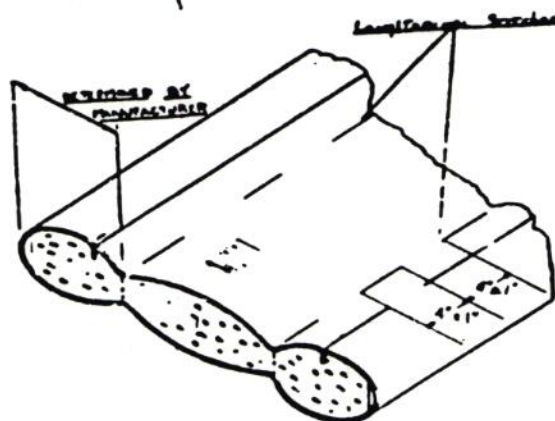


FIGURE 4
Typical Section Through Blarney

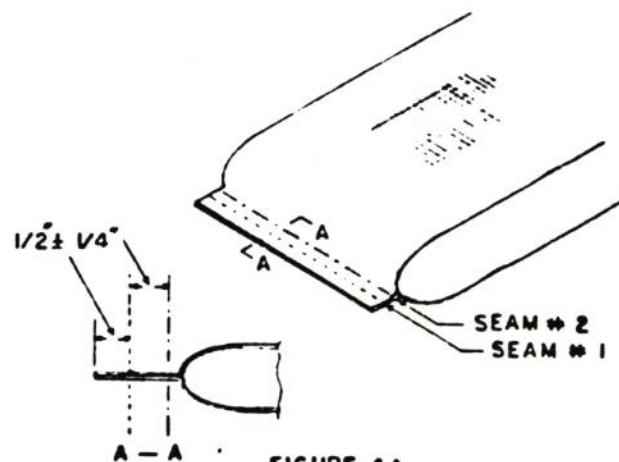


FIGURE 4A

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE



6.3.4.2 The specific placement of the longitudinal stitches is at the discretion of the fabricator.

6.3.4.3 When fabricating 2" thick conduit wrap, "darts" or similar may be used instead of longitudinal seams to secure the filler material in position. Refer to Figure 5.

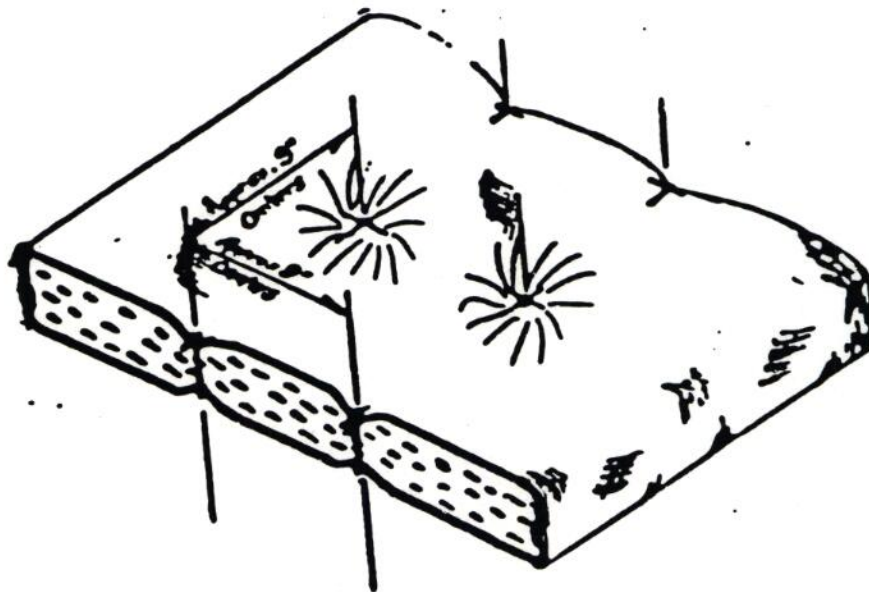


FIGURE 5

6.4 Fabricator Inspector

6.4.1 The fabricator shall assure that the completed wrap assembly conforms to the requirements specified on the applicable fabrication order.

6.4.2 This inspection by fabrication shall be in addition to verification by QC as defined in QCP-10002.

6.5 Identification Markings



6.5.1 Identification markings shall be placed on each wrap assembly at a minimum of two locations.

- a. In close proximity to one of the lengthwise edges on the exposed surface.
- b. In close proximity to one of the ends on the exposed surface.
- c. Various project requirements may specify that this marking is also provided on the interior (non-fire) surface.

6.5.2 These markings shall be the blanket number as defined on the applicable fabrication order.

6.5.3 Markings shall be of a waterproof paint or ink which will retain the marking, withstand weathering deterioration, and other handling effects and shall not be deleterious to the fabric.

6.5.4 These markings shall be in characters no less than 3/4 inch (19 mm) high.

7.0 ATTACHMENTS

NONE

PROCEDURE FOR: INSTALLATION OF THE INSULCO/HEMYC PROTECTIVE WRAP SYSTEM TO JUNCTION BOXES AND SIMILAR EQUIPMENT	PROCEDURE NUMBER: <u>8400.108</u>
------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------

PROCEDURE ISSUE SUMMARY

ISSUE/DATE	PREPARER	APPROVED	COMMENTS
A ISSUE 03/14/83	R.L. Meadows by <i>Detmick</i>	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Issue for Construction
B ISSUE 03/30/83	R.L. Meadows per <i>C. Walker</i>	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Add additional reference

9308270300 930813
 PDR ORG NRRB
 PDR

Form QC 5
 06/01/82
 supersedes previous
 QC 5, QC 5a & QC 6

P O BOX 2531 • HOUSTON, TEXAS 77001 • (713) 688-8971

ISSUE:

B ISSUE
03/30/83

B & B INSULATION, INC.

NO: 8400.10:

PAGE: 2 of 6

INSTALLATION OF THE INSULCO/HEMYC PROTECTIVE WRAP SYSTEM TO JUNCTION BOXES AND SIMILAR EQUIPMENT

1.0 PURPOSE

The purpose of this Procedure is to assure that the installation of the INSULCO/HEMYC Protective Wrap System is consistent with the system as tested in the various qualification tests. The Fire Qualification Test, referenced as B&B CIP-1026, consisted of a One (1) Hour Fire Exposure, per ASTM E-119 criteria, including hose stream test in accordance with the AMERICAN NUCLEAR INSURERS Information Bulletin No. 5(79) entitled, "ANI/MAERP STANDARD FIRE ENDURANCE TEST METHOD TO QUALIFY A PROTECTIVE ENVELOPE FOR CLASS 1E ELECTRICAL CIRCUITS".

2.0 SCOPE

This Procedure provides the methods and guidelines to be utilized for the installation of Protective Wrap Components to electrical junction boxes and similar equipment.

3.0 REFERENCES

3.1 10CFR50, Appendix R

3.2 ANI Bulletin No. 5(79)

3.3 HEMYC Test CIP-1026

3.4 B&B Installation Procedure No. 101
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM -
STRAIGHT SECTIONS

B 3.5 QCP-10001, PACKAGING, SHIPPING, RECEIVING, HANDLING, AND STORAGE
FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS.

B 3.6 QCP-10002, FABRICATION INSPECTION FOR INSULCO/HEMYC PROTECTIVE WRAP
COMPONENTS

B 3.7 QCP-10003, INSTALLATION INSPECTION CRITERIA FOR INSULCO/HEMYC PROTECTIVE
WRAP COMPONENTS

B 3.8 INSULCO/HEMYC PROTECTIVE CABLE WRAP SYSTEM TYPICALS
b7b Drgs. B-310, B-311, B-312, and B-313.

4.0 DEFINITIONS

None

5.0 RESPONSIBILITY

5.1 The authorized installer's ENGINEERING DEPARTMENT shall be responsible to define the scope of work as prescribed on the applicable contract documents and provide the appropriate drawings, specifications, requirements, instruction, etc., to the department responsible for installation.

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

This department shall also be responsible to provide liason with applicable client personnel and other internal departments to assure smooth flow of communication.

- 5.2 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the identification and scheduling of work to be performed as defined on the documents furnished by ENGINEERING.
- 5.3 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the performance of installation activities herein prescribed.
- 5.4 INSULCO, INC. QUALITY ASSURANCE DEPARTMENT shall be responsible that appropriate inspection, documentation, and monitoring is provided as established in the applicable INSULCO and/or B&B Insulation Quality Control Procedures.

The Quality activities may be performed by the Quality Control Department of any affiliate company of INSULCO, INC., or by any organization granted written authorization by the INSULCO QUALITY ASSURANCE DEPARTMENT utilizing the established INSULCO QC Procedures. If this is the case, INSULCO, QA maintains the responsibility for the QA/QC of the system installation and shall certify that the installed system is consistent with the qualification tested system design.

6.0 PROCEDURE

6.1 Layout of Wrap

- 6.1.1 The installer's Site Engineer shall take exterior measurements of the junction boxes to be protected and develop a pattern similar to the pattern shown in Figure 1. An alternate method would be to develop pieces that could be field sewn as shown in Figure 2.

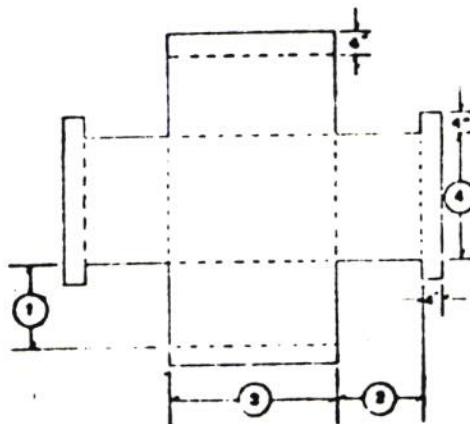


FIGURE 1

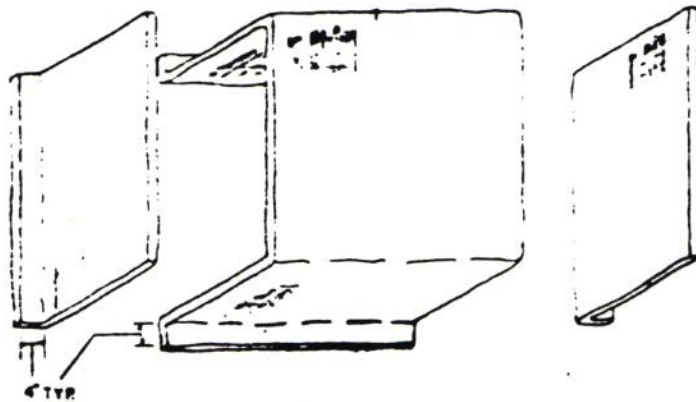


FIGURE 2

- 6.1.2 Dimensions #1, 2 and 3 on Figure 1 should be increased 4" from junction box dimensions to allow for wrap thickness.
- 6.1.3 Note on Figures 1 and 2 that approximately 4" is allowed at ends to overlap onto surface for attachment.
- 6.1.4 The Installer's Site Engineer should ensure that sufficient material allowances are made on all patterns to provide for overlap at corners of junction box.

6.2 Installation

- 6.2.1 Wrap system may be installed as shown in Figure 3 for floor, wall, or ceiling mounting or as shown in Figure 4 in the case of free standing equipment.

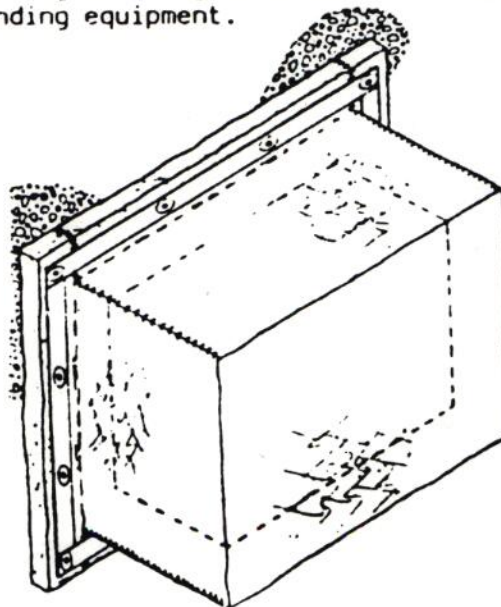


FIGURE 3

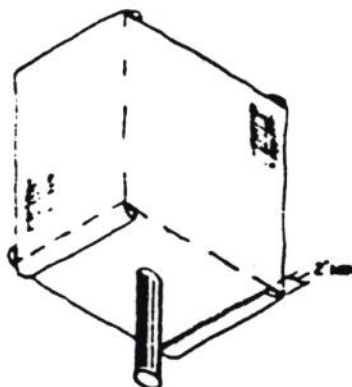


FIGURE 4

- 6.2.2 For equipment that will require frequent access, a framework may be used as shown in Figure 5 to provide ease of system removal.

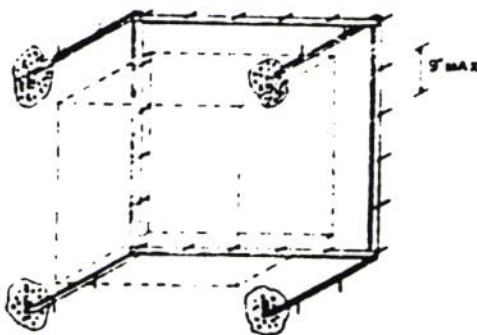


FIGURE 5

- 6.2.3 Concrete anchors used for floor, wall or ceiling installation shall be placed as determined by Installer's Site Engineer.
- 6.2.4 Mounting of wrap to floor, wall or ceiling shall be done similar to that described in B&B Procedure 8400.104
- 6.2.5 All sewing shall be done in accordance with the requirements of B&B Procedure 8400.104.

6.2.6 Ensure that no gaps exist in wrap system. Minimum thickness of wrap at all points is 2". Fill as necessary with ceramic blanket to maintain minimum thickness.

7.0 ATTACHMENTS

None



INSULCO INCORPORATED

March 1, 1983

FOREWORD

This Procedure has been developed by B&B Insulation, Inc., an affiliate company of INSULCO, INC. and is intended for use in the installation of the HEMYC PROTECTIVE WRAP SYSTEM into nuclear facilities.

This Procedure may be utilized by an affiliate company of INSULCO, INC. or by any organization granted written authorization by INSULCO, INC. Refer to Section 5.4 within this Procedure for certification of the installed system requirements.

INSULCO, INCORPORATED


L. Charles Spriggs
Quality Assurance Manager




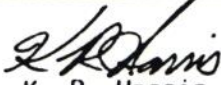
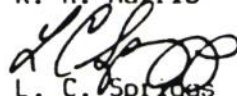


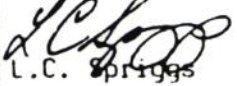
PROCEDURE FOR:

THE PREFABRICATION AND INSTALLATION APPROVAL
OF THE INSULCO/HEMYC PROTECTIVE WRAP SYSTEM

PROCEDURE NUMBER:

8400.109

PROCEDURE ISSUE SUMMARY

ISSUE/DATE	PREPARER	APPROVED	COMMENTS
A DRAFT 03/15/83	 R.L. Meadows	 K. R. Harris  L. C. Spriggs	Issue for Review & Comment
B ISSUE 03/30/83	 R.L. Meadows	 K.R. Harris  L.C. Spriggs	Add 3.9, 3.10, and 3.11; Rev. 6.0

9308270302 930813
PDR ORG NRRB
PDRFORM 14.2
06/01/82



INSULCO INCORPORATED

March 1, 1983

FOREWORD

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INSULCO, INCORPORATED


L. Charles Spriggs
Quality Assurance Manager

PROCEDURE FOR THE PRE-FABRICATION AND
INSTALLATION APPROVAL OF THE INSULCO/HEMYC
PROTECTIVE WRAP SYSTEM

1.0 PURPOSE

The purpose of this Procedure is to provide a method for the client acceptance of proposed Wrap installation prior to fabrication. This Procedure will also provide a tracking system by which traceability of wraps is provided after installation.

2.0 SCOPE

This Procedure will outline the methods to be used for the Pre-fabrication approval of proposed wrap installation throughout the project and provide the tracking of materials through "as built's".

3.0 REFERENCES

- 3.1 B&B Installation Procedure No. 8400.101
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM -
STRAIGHT SECTIONS OF CABLE TRAY
- 3.2 B&B Installation Procedure No. 8400.102
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM -
CURVED SECTIONS OF CABLE TRAY
- 3.3 B&B Installation Procedure No. 8400.103
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM ONTO
SINGLE OR MULTIPLE CONDUITS
- 3.4 B&B Installation Procedure No. 8400.104
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM
AROUND INTERFERENCES AND OBSTRUCTIONS
- 3.5 B&B Installation Procedure No. 8400.105
MANUFACTURE OF INSULCO/HEMYC CABLE PROTECTION SYSTEM COMPONENTS
- 3.6 B&B Installation Procedure No. 8400.106
INSTALLATION OF FIRESTOPS AND TERMINATIONS WITHIN THE INSULCO/HEMYC
PROTECTIVE WRAP SYSTEM FOR CABLE TRAY(S) AND CONDUIT
- 3.7 B&B Installation Procedure No. 8400.107
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM
MULTIPLE CABLE TRAYS
- 3.8 B&B Installation Procedure No. 8400.108
INSTALLATION OF THE INSULCO/HEMYC PROTECTIVE WRAP SYSTEM TO JUNCTION
BOXES AND SIMILAR EQUIPMENT

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

3.9 QCP-10001, PACKAGING, SHIPPING, RECEIVING, HANDLING AND STORAGE FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS

3.10 QCP-10002, FABRICATION INSPECTION FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS

3.11 QCP-10003, INSTALLATION INSPECTION CRITERIA FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS

3.12 INSULCO/HEMYC PROTECTIVE CABLE WRAP SYSTEM TYPICALS
B&B Drgs B-310, B-311, B-312, and B-313

3.13 10CFR50, Appendix R

3.14 ANI Bulletin No. 5(79)

3.15 HEMYC Test CIP-1026

4.0 DEFINITIONS

SYSTEM - a cable tray, conduit, or junction box (single or multiple) to be protected with the wrap system. For the purposes of this procedure a system is limited to a single floor elevation.

5.0 RESPONSIBILITY

5.1 The authorized installer's ENGINEERING DEPARTMENT shall be responsible to define the scope of work as prescribed on the applicable contract documents and provide the appropriate drawings, specifications, requirements, instructions, etc., to the department responsible for installation.

This department shall also be responsible to provide liason with applicable client and other internal departments to assure smooth flow of communication.

5.2 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the identification and scheduling of work to be performed as defined on the documents furnished by B&B ENGINEERING.

5.3 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the performance of installation activities herein prescribed.

5.4 INSULCO, INC. QUALITY ASSURANCE DEPARTMENT shall be responsible that appropriate inspection, documentation and monitoring is provided as established in the applicable INSULCO and/or B&B Insulation Quality Control Procedures.

The quality activities may be performed by the Quality Control Department of any affiliate company of INSULCO, INC. or by any organization granted written authorization by the INSULCO QUALITY ASSURANCE DEPARTMENT utilizing the established INSULCO QC Procedures. If this is the case, INSULCO QA maintains the responsibility for the QA/QC of the system installation and shall certify that the installed system is consistent with the qualification tested system design.

B 6.0 PROCEDURE

The INSULCO/HEMYC Protective Wrap Schematic (Form QC-63) shall be completed utilizing the steps as defined herein.

6.1 STEP ONE (See Figure 1 for example)

An installer's site engineering representative shall prepare the initial schematic illustrating the routing and placement of the system to be proposed. This shall be performed as a result of an actual job walkdown and evaluation. The information listed below shall be inserted in the appropriate locations on the form.

GENERAL

- 6.1.1 Schematic No. - Numerical control number assigned to this specific schematic.
- 6.1.2 Rev. A - Number of revision to this specific schematic (if applicable).
- 6.1.3 Project Ref. - Job Number and Name reference of the Project.
- 6.1.4 Area - Area, room, etc., within the plant where the proposed system is located.
- 6.1.5 Elev. - Floor elevation where located.
- 6.1.6 Dwg. Ref. - Applicable drawing(s) normally supplied by client.

B&B ENGINEERING

- 6.1.7 Date - Date of initial walkdown and initiation of form.
- 6.1.8 By - Signature of installer's site engineering representative performing walkdown.

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

- 6.1.9 System Description - Conduit(s), Cable Tray(s), Junction Box(es) identification numbers and description of all such items involved.
- 6.1.10 Length - Approximate length of proposed system.
- 6.1.11 Interferences - Interferences, obstructions, areas of difficult accessibility, etc.

DRAWING

- 6.1.12 - Sketch illustrating the routing and placement of proposed system.
- 6.1.13 - Approximate stop and stop column/grid identifications (alphabetical and/or numerical).
- 6.1.14 - Additional views as necessary for clarification purposes.

After incorporation of items referenced above, the Schematic sheet shall then be transmitted to B&B Site Engineering for further action.

6.2 STEP TWO (See Figure 2 for example)

After receipt of the initial Schematic from the B&B Engineering representative performing such action, B&B Site Engineering shall perform the following functions.

- 6.2.1 Proposed detail number(s) to be used in any given area or section of the system shall be added to the sketch.
- 6.2.2 Additional information, as required, for clarification purposes shall also be placed in the appropriate areas of the sheet.
- 6.2.3 Areas that cannot be referenced to a typical detail shall be noted and a sketch attached to illustrate alternate method(s) proposed.
- 6.2.4 After B&B Site Engineering appropriate action and concurrence the individual performing such actions shall place the date and his signature in the Date 2 and By 2 section of the B&B Engineering block.

This Schematic sheet shall then be transmitted to Client for approval of proposed installation.

6.3 STEP THREE See Figure 3 for example:

Client's engineering representative shall examine the Schematic upon receipt from B&B's Site Engineering.

6.3.1 If no comments on Schematic from client, the ACCEPT box shall be checked and Schematic returned to B&B Site Engineering. This constitutes client acceptance of the proposed system construction and releases the specific system for construction.

6.3.2 If client does not accept the proposed system design, the REJECT box shall be checked and comments noted to illustrate reasons.

6.3.3 The client's engineer performing activities listed in 6.3.1 and 6.3.2 shall signify by inserting date and signature in the applicable spaces.

6.4 STEP FOUR (See Figure 4 for example)

Upon receipt of the Schematic from client engineering, the B&B site engineering shall perform the following activities.

6.4.1 If client has checked the ACCEPT box, and released the system for construction, appropriate measures shall be taken to release necessary fabrication orders or to procure applicable wraps from stocks on site.

6.4.2 If client has checked the REJECT box and supplied comments B&B site engineering shall respond to comments within five (5) working days after receipt from client.

6.4.3 Any Schematic denoted as REJECT must proceed through steps outlined in 6.3 after resolution of comments. This shall be repeated until client acceptance is granted.

6.5 INSTALLATION (See Figure 4 for example)

6.5.1 B&B Site Engineering shall be responsible that the appropriate wraps are released to Production for installation.

6.5.2 The applicable wrap identification numbers shall be denoted on the sketch by either B&B Engineering or B&B QC to assure traceability.

6.5.3 Any major field changes from proposed installation previously accepted by client engineering shall be pre-approved by client and be so noted on schematic. The change shall be "clouded" and initialed by authorized client representative.

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

6.6 DOCUMENTATION

6.6.1 The completed Schematic shall become an integral part of the QC documentation including, but not limited, to the following:

- a) QC-59 Fabrication Order
- b) Form QC-62 Hold Point Inspection & Client Final Signoff
- c) Applicable Client and Installer's drawings
- d) Other quality documentation relevant to cable wrap installation such as Inspection Reports, NCR's, etc.

7.0 ATTACHMENTS

- 7.1 Figure 1
B&B Form QC-63 SCHEMATIC
Step One
- 7.2 Figure 2
B&B Form QC-63 SCHEMATIC
Step Two
- 7.3 Figure 3
B&B Form QC-63 SCHEMATIC
Step Three
- 7.4 Figure 4
B&B Form QC-63 SCHEMATIC
Step Four

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

INSULCO/HEMYC
PROTECTIVE WRAP SCHEMATIC
----- SCHEMATIC -----

SCHEMATIC NO: 015 REV: 0 AREA: RAB ELEV: +46
PROJECT REF: FS667-Waterford 3 DRG REF: G252-SIS

BAB ENGINEERING		CLIENT RELEASE FOR CONSTRUCTION	
1. Date: <u>3-23-83</u>	By: <u>Paul Moody</u>	<input type="checkbox"/> ACCEPT	<input type="checkbox"/> REJECT-see comments below
2. Date: _____	By: _____	Comments: _____	
System Description: <u>2" Conduit - 36388-SAB</u>		_____	
Length: <u>75'</u>		_____	
Interferences, etc. <u>3 hangers</u>		Date: _____ By: _____	
_____		_____	

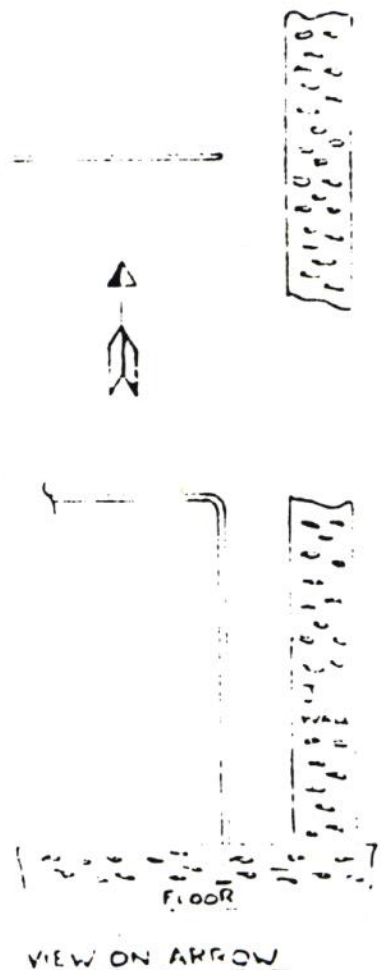
N ←

63475 SAB

EXAMPLE

FIGURE 1

Step One - Action performed by installer's engineer after job walkdown.



INSULCO/HEATCO
PROTECTIVE WRAP SCHEMATIC

----- SCHEMATIC -----

SCHEMATIC NO: 015 REV: 0 AREA: RAB ELEV: +96

PROJECT REF: FS667-Waterford 3 DRG REF: G252-515

B&B ENGINEERING

1. Date: 3-23-83 By: Red Moody
2. Date: 3-24-83 By: J. Chang
System Description: 2" Concrete - 3/8" SAE

Length: 75'
Interferences, etc.: 3 Hangers

CLIENT RELEASE FOR CONSTRUCTION

☐ ACCEPT ☐ REJECT-see comments below

Comments: _____

Date: _____ By: _____

N ←

63-75 SAE



EXAMPLE



FIGURE 2

Step Two - Circled items are actions performed by installer's site engineering office prior to submittal to client.

VIEW ON ARROW

PROTECTIVE WRAP SCHEMATIC

----- SCHEMATIC -----

SCHEMATIC NO: 015 REV: 0 AREA: RAB ELEV: +96
PROJECT REF: ES667-Waterford 3 DRG REF: G252-515

BAB ENGINEERING		CLIENT RELEASE FOR CONSTRUCTION	
1. Date: <u>3-23-83</u>	By: <u>RA Moody</u>	<input checked="" type="checkbox"/> ACCEPT	<input type="checkbox"/> REJECT-see comments below
2. Date: <u>3-24-83</u>	By: <u>Q. Davis</u>	Comments: _____	
System Description: <u>2" Conduit - 3600-SAB</u>			
Length: <u>75'</u>			
Interferences, etc. <u>3 Hangers</u>			
		Date: <u>3/25/83</u> By: <u>M. Smith</u> <u>Also see to</u>	

N ←

63475 SAB

DETAIL
NW 7

DETAIL
NW 9

DETAIL
NW 8

DETAIL
NW 9

EXAMPLE

FIGURE 3

Step Three - Circled items are actions performed by client engineering representative, illustrating either ACCEPT or REJECT of the proposed installation.



VIEW ON ARROW

INSULCO/HEMYC
PROTECTIVE WRAP SCHEMATIC

----- SCHEMATIC -----

SCHEMATIC NO: 015 REV: 0 AREA: BAB ELEV: +46
PROJECT REF: FS667-Waterford 3 DRG REF: G252-515

BAB ENGINEERING

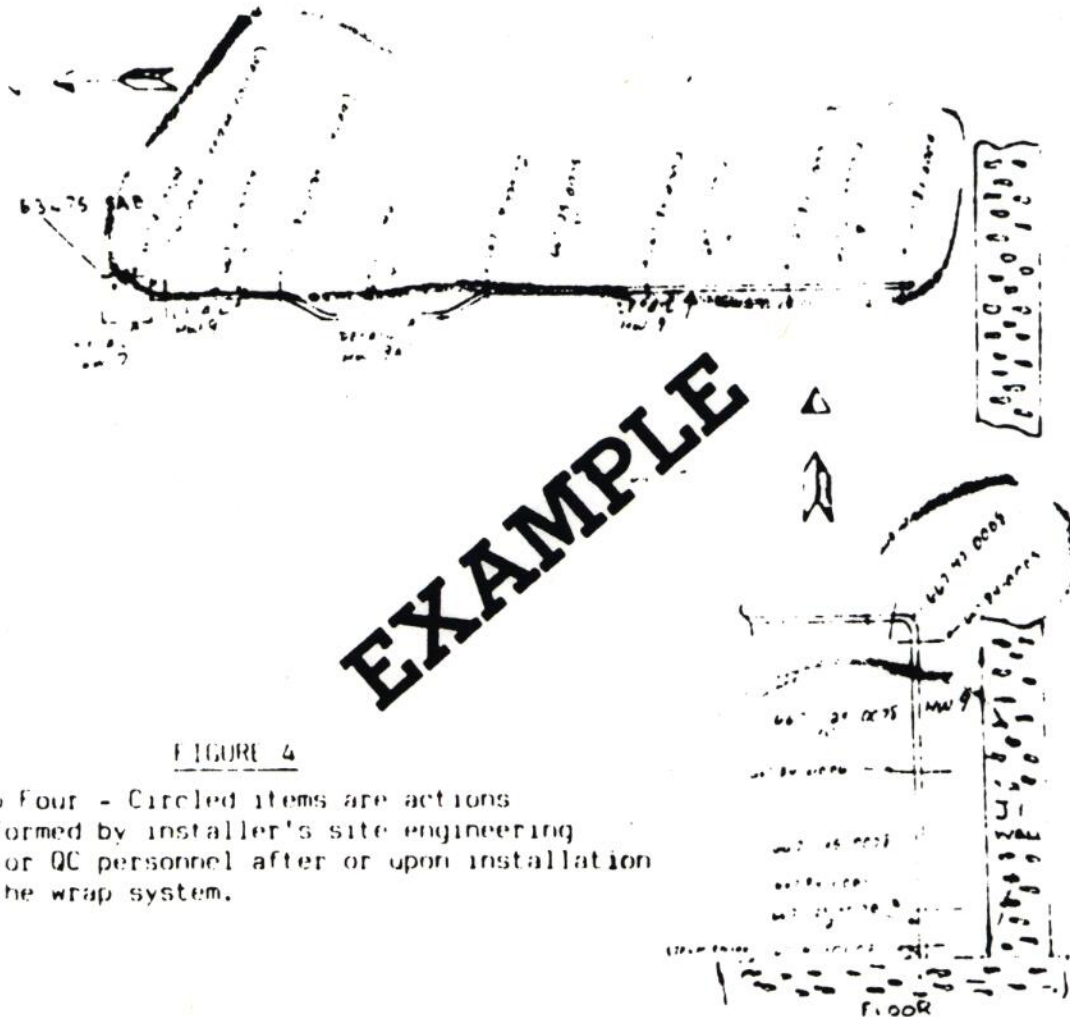
1. Date: 3-23-83 By: R. Maddy
2. Date: 3-24-83 By: J. Jones
System Description: 2" Condut. 36388-SAB

Length: 75'
Interferences, etc. 3 hangers

CLIENT RELEASE FOR CONSTRUCTION

☒ ACCEPT ☐ REJECT-see comments below
Comments: _____

Date: 3/25/83 By: M. Edwards
9 hangers



Step Four - Circled items are actions performed by installer's site engineering and/or QC personnel after or upon installation of the wrap system.

Joe Jones
BAB OC
Form 62-607/021
3/21/83